PHYSIK | CHEMIE BIOLOGIE | TECHNIK

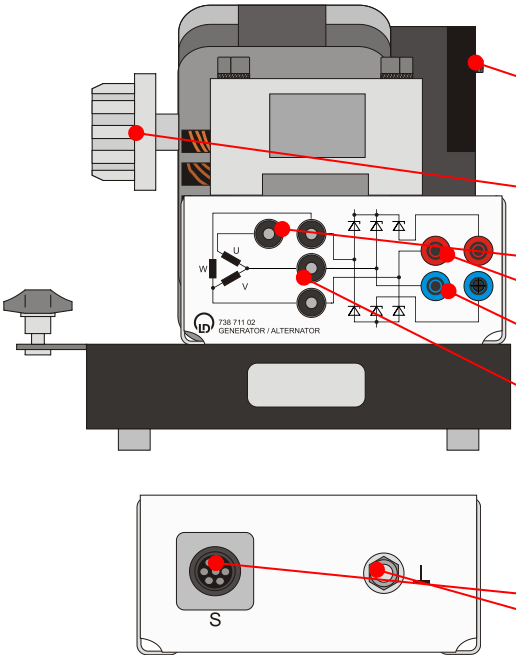
LD DIDACTIC

09/14-W2010-Wei

User manual 738 711*

Automotive compact alternator

738 711-02: Alternator



① Connector B+ (side view)

② Coupling

③ Generator phase interruption (see safety notes!)

④ Plus diode interruption (see safety notes)

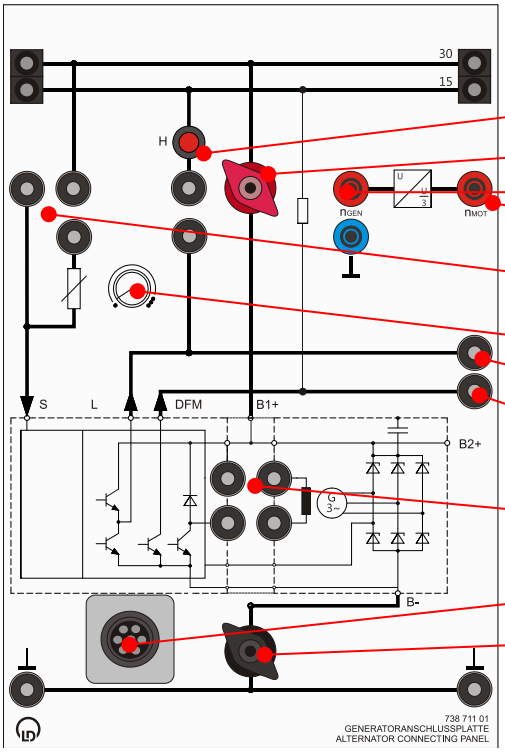
⑤ Minus diode interruption (see safety notes)

⑥ Phase measurement sockets

Rear side:

⑦ Connector to panel

⑧ Ground connector



738 711-01: Generator connecting panel

⑨ Generator control lamp

⑩ Connection B+

⑪ Speed signal from driving motor

⑫ Output motor speed signal

⑬ Selector for reference signal

⑭ Sense signal

⑮ Diagnosis output

⑯ Load signal output

⑰ Excitation measurement

⑱ Connection to generator

⑲ Ground connector

* This user manual is valid for units with a manufacturing date as of September 2013!

LD DIDACTIC GMBH · Leyboldstrasse 1 · D-50354 Hürth · Phone +49 (0)2233 604-0 · Fax +49(0)2233 604-222 · e-mail: info@ld-didactic.de

© by LD DIDACTIC GMBH

Printed in the Federal Republic of Germany
Technical alterations reserved

1 Description

The system „Compact alternator“ consists of a generator with multi function controller mounted on a base and a connecting panel which can be integrated into further experiment set-ups. The generator is driven by the automotive driving machine which is a frequency converter driven asynchronous machine and thus with variable speed. To complete the set-up an additional starting battery and a load are required.
The following functions can be investigated:

- Controlled pre-excitation
- Battery sensing
- Rotation recognition of the generator
- Emergency function in case of missing sense signal
- Error detection and display
- DFM load signal

2 Scope of delivery

- Compact alternator (738 711-02)
- Alternator connecting panel (738 711-01)
- Connecting cable 6 pole

3 Technical data

• Nominal output voltage	14 V
• Nominal output current	75 A
• Maximum speed	12.000 rpm

Safety notes

- Before you run the system make sure that all ground connectors are connected properly!
- Use safety plugs and cables only!
- These units must only be used in the range as described in the experiment manual. The usage in a real vehicle is strictly forbidden!
- Before you run the system make sure that all rotating mechanical parts are covered properly! Risk of injury!
- Both battery poles must not be connected together! Risk of fire!
- The bridging plugs 3, 4 and 5 must never be disconnected while the generator is working!

4 Possible faults and solutions

Important note:

If the diagnosis output L (15) is connected to the *control relay for pre-heating system TDI 738 963* the terminal 15 input of this device must not be connected!

Control light does not work	• Battery not connected • Battery empty • Connection between panel and alternator not set up
Motor does not rotate	• Motor not plugged into the mains
Control light does not turn off	• No ground connection to generator • No alternator B+ connection • Control cable between alternator and panel not plugged in • Missing bridging plugs on alternator or connecting panel

©by Leybold Didactic GmbH

Printed in the Federal Republic of Germany
Technical alterations reserved